



The Hyperloop and the annihilation of space and time

By Jon Christensen

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The Hyperloop (<http://www.teslamotors.com/blog/hyperloop>), Elon Musk’s extended napkin sketch of a futuristic tube connecting California’s two most important cities, promises to bring San Francisco as close to Los Angeles as Santa Monica is—except at rush hour, when San Francisco would be closer. California has a high-speed rail system in the works (<http://www.hsr.ca.gov/>), but a tube is “the only option for super fast travel,” Musk writes in his fifty-seven-page proposal (<http://www.teslamotors.com/blog/hyperloop>). In Musk’s Silicon Valley-inflected world view, “city pairs” like San Francisco and Los Angeles are nodes in an abstract global network. What is in between doesn’t really matter except as a vector, a set of engineering obstacles to be overcome.

Musk’s vision of transcending time and space to connect those nodes appears, at first glance, remarkably similar to railroad hype in the nineteenth century, when some observers spoke of railroads just as fantastically as others are swooning over Hyperloop now. “We flew on the wings of the wind at the varied speed of fifteen to twenty-five miles an hour, annihilating ‘time and space,’ ” wrote one scribe in the Charleston Courier, after a railroad trip on Christmas Day in 1830. And the naturalist John Muir, in one of his first magazine articles for *Old and New*, wrote of railroads in 1872:

With reference to sight-seeing on the Pacific coast, our so-called trans-continental railroad is a big gun; charged with steam and cars it belches many a tourist against the targets of the golden State, — geysers, big trees, Yosemite, &c., among which they bump and ricochet, and rebound to their Atlantic homes, bruised and blurred, their memories made up of a motley jam of cascades and deserts and mountain domes, each traveller voluntarily compacting himself into the fastest cartridge of car and coach, as if resolved to see little as possible. Last year tourists were whizzed over plain and mountain from San Francisco to Yosemite in two days; and I learn that arrangements are being made for next season whereby the velocity of the shot will be increased to one day. Thus is modern travel spiritualized. Thus are time and space—and travellers—annihilated.

Muir’s literary recounting of a railway journey sounds uncannily like a description of a trip on the Hyperloop, which Musk previewed as a “a cross between a Concorde, a railgun, and an air hockey table.” (Tad Friend, writing for this Web site (<http://www.newyorker.com/online/blogs/currency/2013/08/elon-musk-hyperloop.html>), described it, less charitably, as looking more like “the Keystone pipeline hoisted onto a chairlift.”) Hyperloop passengers would be crammed into a cylindrical pod—much like a “cartridge”—which would shoot through a low-pressure tube at a velocity of nearly eight hundred miles per hour on a cushion of air. While the sealed Hyperloop system would be closed off from the “motley jam of cascades and deserts and mountain domes” and the panoramas of river valleys and towns flashing by—the defining aesthetic experience of riding a train—Musk has promised that “beautiful landscape will be displayed” inside of the supersonic coffins. And though the intense gravitational force generated by the Hyperloop’s extreme speed may not bruise bodies, it could nauseate passengers (<http://www.theverge.com/2013/8/16/4626506/speed-bumps-and-vomit-are-the-hyperloops-biggest-challenges>). Meanwhile, some engineers worry that any imperfections in the tube could cause a high-speed catastrophe and result in the actual annihilation of travellers.

Of course, the goal of railroad companies has never been annihilation of any kind; it has always been merely to re-organize space, time, and travellers to the advantage of the railway owners. In his recent book “Railroaded: The Transcontinentals and the Making of Modern America (<http://www.amazon.com/Railroaded-Transcontinentals-Making-Modern-America/dp/0393342379>),” the historian Richard White shows how new rail lines brought some places closer together by making it cheaper to ship products to markets, while making some more distant from one another (by charging more for shipping there) and destroying others, bypassing them completely or eliminating rival modes of transport, such as steamboats on the San Joaquin River in California—effectively erasing ports and river routes from transportation maps. “The town that is distant a hundred miles by the rail is so near that its inhabitants are neighbors; but a settlement

twenty miles distant across the uncleared country is unknown, unvisited, and probably unheard of by the women and children,” wrote the British novelist Anthony Trollope while visiting the United States in the eighteen-sixties. The railway “is the first necessity of life, and gives the only hope of wealth.”

Musk’s Hyperloop, if it were built in place of the high-speed railway currently being planned in California, would portend similar effects on the vast tracts of the state between San Francisco and Los Angeles. While it’s doubtful that heartland towns like Bakersfield, Fresno, and Merced—which would be connected to the high-speed rail—would suddenly become “unknown, unvisited, and probably unheard of by the women and children” as the Hyperloop zipped by, Musk’s technology would dramatically alter their relation to the rest of the map of California. This also cuts to the core of the Hyperloop’s political improbability: it would require, at a minimum, the acquisition of tens of thousands of acres of land stretching across those same, forgotten municipalities and snaking down the California Interstate 5 highway corridor, according to some calculations (<http://www.theatlantic.com/technology/archive/2013/08/elon-musks-futuristical-napkin-drawing-of-a-mass-transit-system/278608/>). The mere billion dollars—of the Hyperloop’s estimated six-billion-dollar cost—that Musk allots to acquiring land and permits seems a low estimate, at best.

The Hyperloop may be nothing more than vaporware designed as a critique of high-speed rail for not moving fast enough; in some ways it seems effective, particularly as the high-speed-rail project has become bogged down in lawsuits (<http://www.sfgate.com/news/article/Big-setback-for-California-high-speed-rail-project-4739710.php>), struggles over permits, and other controversies. But in truth, it’s not a particularly useful solution—it doesn’t solve the real, complicated issues inherent to constructing fast, effective rail transit. It merely elides them, all while propagating the kind of magical thinking that often gathers around high-tech billionaires—like the notion that they really can annihilate space and time.

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